

FURTHER RECORDS OF MARINE ISOPOD CRUSTACEANS FROM THE CARIBBEAN

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Abstract.—Five species of isopods are described from Belize. The anthurid *Mesanthura bivittata*, new species, is characterized primarily by its double-barred dorsal color pattern. The idoteid *Miratidotea bruscai*, new genus and species, is characterized chiefly by possessing a pleon consisting of two complete and two incomplete pleonites plus pleotelson. The cirolanid *Anopsilana jonesi*, new species, can be distinguished by its non-projecting pentagonal frontal lamina and a color pattern having a dark central area on the pereonites. *Eurydice personata* (family Cirolanidae), often confused with *E. convexa* and *E. littoralis*, is characterized by the possession of a slender, lanceolate frontal lamina. The new cirolanid genus and species *Xylolana radicolica*, taken from dead mangrove roots, features a fused rostrum and frontal lamina, a strongly projecting clypeus, an overlapping fourth pleonite, distally articulating copulatory stylet, and a produced uropodal sympod. The sphaeromatid *Paraleptosphaeroma glynni*, described from Pacific Panama, is recorded for the first time from the Caribbean.

Anyone following the literature on Caribbean marine isopods will have noted a series of my papers, appearing at irregular intervals, and often covering material from Belize. No doubt the question has been raised: why this dribble of short papers, instead of a single comprehensive work? In compiling a guide to the marine isopods of the Caribbean, I am attempting to deal with as many species as possible, and as new material becomes available, it has been necessary to publish new species before including them in the abovementioned guide. A further factor has contributed to this plethora of titles, viz. continued sampling in the area around Carrie Bow Cay, Belize, over the past nine years. With such concentrated sampling, it is inevitable that rarer species eventually are collected, and that as more and more specialized habitats are investigated, new species will be revealed. As an example of the latter case, see the description in this paper, of a new genus and species, collected less than one hundred meters from the field

laboratory on Carrie Bow Cay. This was the first time, however, that the root-mat of the seagrass *Syringodium* had been sampled. No doubt similar concentrated collecting in other areas of the Caribbean will reveal yet more undescribed forms, and this trickle of taxonomic papers will perforce continue.

Family Anthuridae

Mesanthura bivittata, new species

Figs. 1, 2

Material.—Holotype, USNM 221718, ovig. ♀ TL 7.8 mm. Paratypes, USNM 221719, 1 non-ovig. ♀ TL 7.8 mm, 2 ♂ 5.2 mm, 6 immature specimens 3.0–4.8 mm. Twin Cays, Belize, in red mangroves, 1–2 m, coll. G. Hendler 28 Mar 1980.

Description.—Non-ovigerous female: Proportions $C < 1 = 2 > 3 < 4 = 5 = 6 > 7$. Cephalon with low rounded rostrum; large well pigmented dorsolateral eyes. Articular hollow between pereonites 1 and 2, and 2 and 3. Pleonites 1–5 fused, subequal to per-

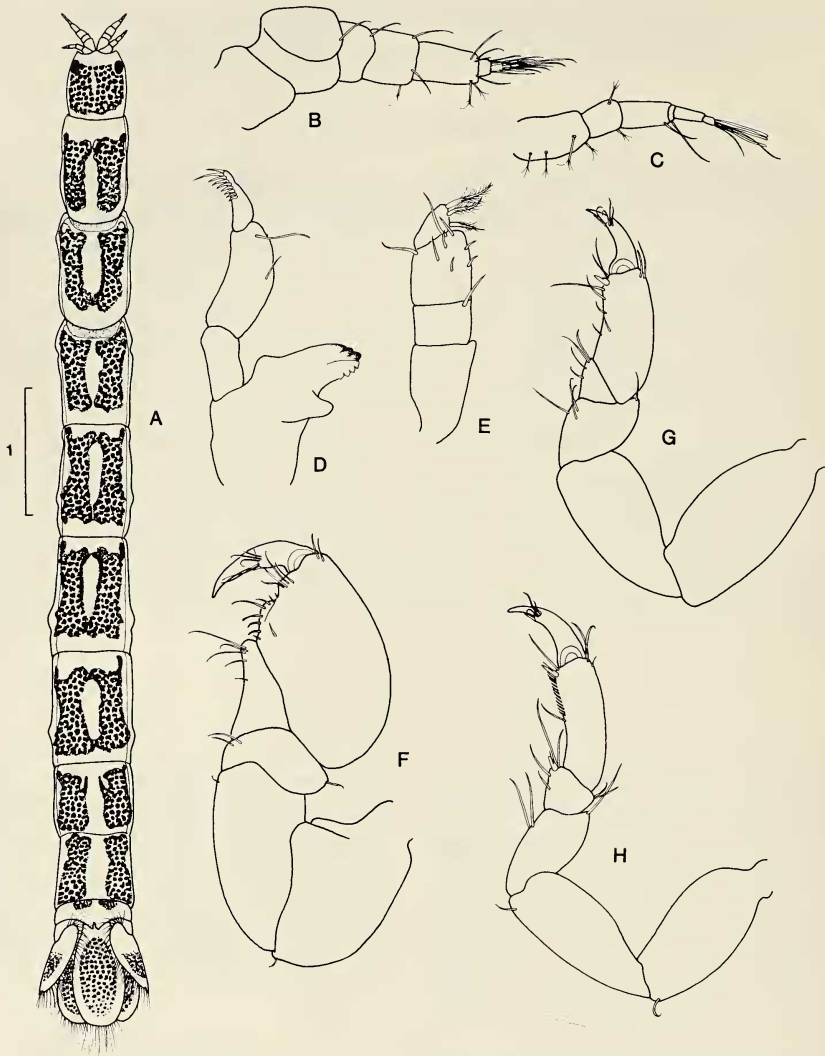


Fig. 1. *Mesanthura bivittata*, ovigerous female: A, Entire animal in dorsal view; B, Antenna; C, Antennule; D, Mandible; E, Maxilliped; F, Pereopod 1; G, Pereopod 2; H, Pereopod 7.

eonite 7 in length; pleonite 6 dorsally free, with small middorsal notch in posterior margin. Telson widest at midlength, posterior margin broadly rounded and bearing numerous elongate simple setae.

Antennular peduncle of 3 articles, basal article longest and broadest; flagellum of 3 articles, terminal article bearing 3 aesthetascs. Antennal peduncle of 5 articles; flagellum of 4 short setose articles. Mandibular palp of 3 articles, terminal article with 8 or

9 spines; incisor of 3 sclerotized cusps; lamina dentata with 4 serrations. Maxilliped lacking endite; palp of 3 articles, terminal article narrower than preceding article, bearing 3 stout fringed setae on medial margin. Pereopod 1, carpus distally rounded; propodus expanded, palm with rounded lobe in proximal half bearing few marginal setae; unguis subequal to rest of dactylus in length. Pereopod 2, carpus short, triangular, lacking free anterior margin; propodus not expand-

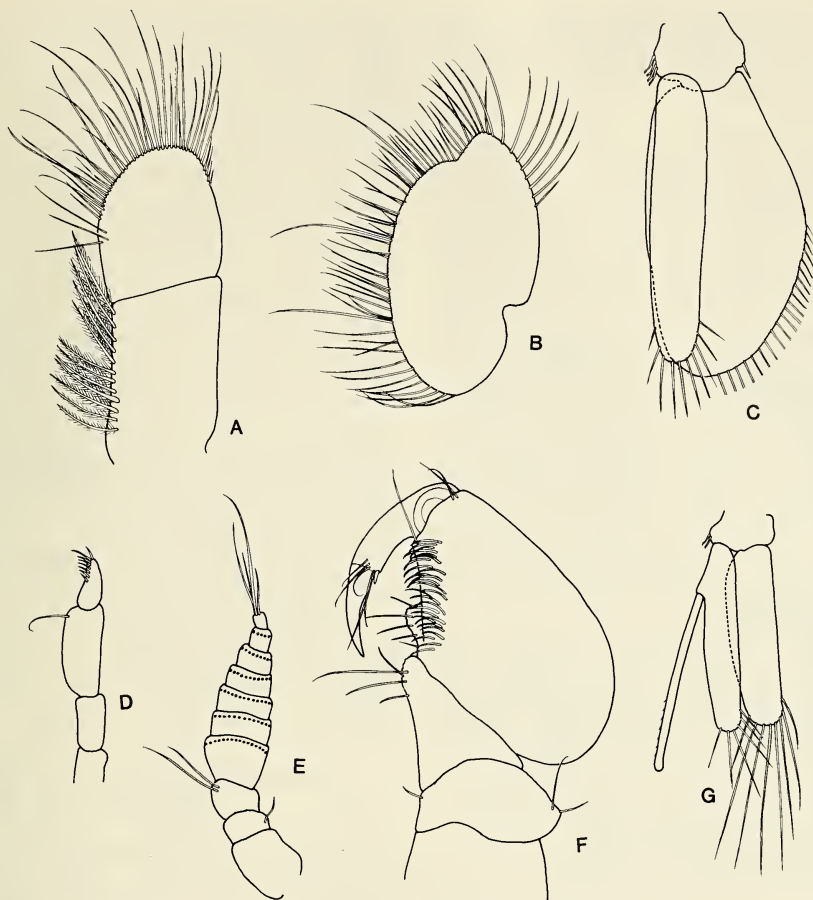


Fig. 2. *Mesanthura bivittata*, ovigerous female: A, Uropodal endopod and sympod; B, Uropodal exopod; C, Pleopod 1. Male: D, Mandible; E, Antennule, aesthetascs indicated by insertions only; F, Pereopod 1; G, Pleopod 2.

ed, bearing single short posterodistal spine. Pereopods 4–7, carpus with anterior margin shorter than posterior, latter with single sensory spine; propodus with row of short spinules in distal half of posterior margin plus single sensory spine. Pleopod 1, exopod operculiform, subequal in length but 3 times wider than endopod; latter with 10 distal plumose setae. Uropodal exopod with notch in distal margin; most of margin bearing elongate setae; endopodal distal margin broadly rounded, bearing numerous elongate setae.

Male: Antennular flagellum of 7 articles, first 6 bearing distal band of aesthetascs.

Mandible consisting of palp attached to short featureless basal structure. Pleopod 2, endopod with copulatory stylet articulating in proximal half, slender, cylindrical, distally rounded, reaching well beyond apex of ramus.

Color pattern.—Similar in male and female. Large dark-brown chromatophores arranged in broad patch on cephalon stretching from eyes to posterior margin, with narrow elongate gap along midline; pereonites 1–6 with 2 broad elongate bands separated by fairly wide gap, bands touching anteriorly and/or posteriorly; pereonite 7 and fused pleonites 1–6 each with 2 widely

separated bands. Pleonite 6 with 2 small patches. Telson with elliptical patch becoming posteriorly obsolete. Uropods with broad patch on each.

Remarks.—*Mesanthura bivittata* is the eighth species of the genus to be recorded from the Caribbean and/or the Florida Keys. *Mesanthura looensis* Kensley and Schotte, 1987, like the present species, possesses eight spines on the third article of the mandibular palp. Ovigerous at 10 mm, the Floridean species does not have the distinctive double-bar pattern seen in *M. bivittata*. *Mesanthura pulchra* Barnard, which has 10 spines on the mandibular palp, while having pigment patches with a central gap, does not have the well defined double-bar. The remaining five species have radically different color patterns and different numbers of mandibular spines.

Etymology.—The specific name is derived from the Latin, meaning ‘two ribbons,’ and refers to the double band of pigment that characterizes this species.

Suborder Valvifera

Family Idoteidae

Miratidotea, new genus

Diagnosis.—Antennal flagellum of single clavate article. Maxillipedal palp of 4 articles. Pleon consisting of 2 complete pleonites, 2 incomplete pleonites, plus pleotelson. Uropods uniramous.

Type species.—*Miratidotea bruscai*, new species. Gender: masculine.

Remarks.—Brusca (1984) placed the subfamily Idoteinae (to which the present genus and species clearly belong) on a sound taxonomic footing, with a phylogenetic analysis of the group. Using in particular the form of the pleon, this author presented a schematic plan (fig. 3) of the possible phylogenetic pathways that gave rise to the approximately 21 known genera of the subfamily. In this plan Brusca postulated several stages for which no forms are yet known. The present species clearly fits one

of these postulated forms in the Lineage A, with its pleon consisting of 2 complete and 2 incomplete pleonites plus pleotelson. This pleonal formula places the present species phylogenetically close to *Cleantioides* Kensley and Kaufman, and indeed the similarities between these two genera, in antennal, mouthpart, pereopodal, and uropodal structure, are marked. Apart from the pleonal structure and minor proportional differences in the appendages, the main difference between *Miratidotea* and *Cleantioides occidentalis* (Richardson) lies in the pleotelson. In the latter, the dorsal margin of the planiform posterior pleotelson consists of two broadly rounded lobes (in dorsal view), barely projecting when seen in lateral view. In *Miratidotea*, these lobes are subacute, and project markedly in lateral view.

Etymology.—The generic name derives from the Latin ‘miratio,’ a surprise, plus ‘idotea,’ the frequently-used suffix taken from the family name Idoteidae.

Miratidotea bruscai, new species

Figs. 3, 4

Material.—Holotype USNM 221720, ovig. ♀ TL 13.0 mm; paratypes USNM 221721, 2 ovig. ♀ TL 10.2 mm, 11.5 mm; Carrie Bow Cay, Belize, from root-mat of seagrass *Syringodium filiforme* in 1.5 m depth, coll. B. Kensley, 11 Dec 1986.

Description.—Ovigerous female: Body elongate-cylindrical, about 6 times longer than wide. Anterior margin of cephalon with tiny midline notch in dorsal view. Eyes dorsolateral, reniform. Sparsely scattered setae over most of dorsal integument, but dense on posterior margin of pereonite 7 and coxa 7, and anterolateral pleon. Pereonite 1 and coxa fused; coxae 2–4 about half lateral length of pereonite, elongate-oval in shape; coxae 5–7 produced posteriorly into triangular subacute lobe. Pleonites 1 and 2 complete, subequal, ventrally tapering to narrowly-rounded free margin; pleonite 3 incomplete, with narrowly-rounded free

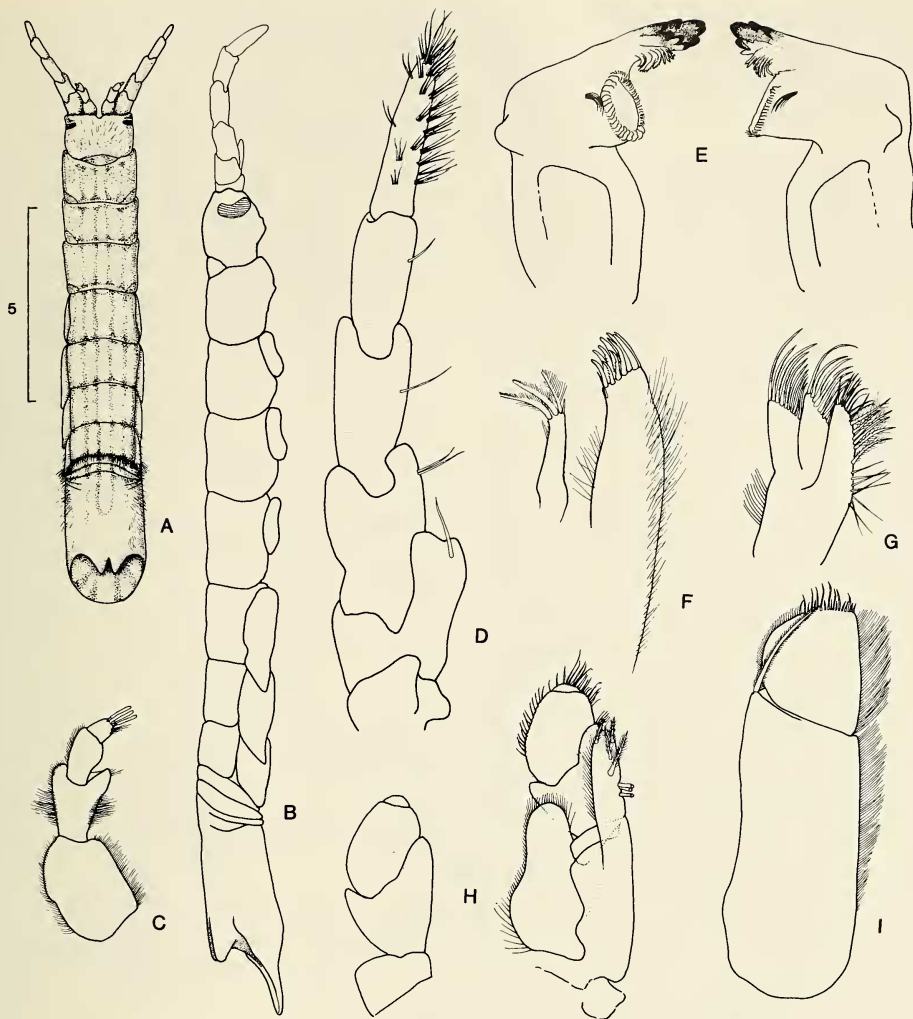


Fig. 3. *Miratidotea bruscai*, ovigerous female: A, Holotype in dorsal view; B, Whole animal in lateral view; C, Antennule; D, Antenna; E, Left and right mandibles; F, Maxilla 1; G, Maxilla 2; H, Maxilliped, with palp shown separately; I, Uropod.

ventral margin; pleonite 4 incomplete, lacking free ventral margin. Posterior planiform area of pleotelson with dorsal margin armed with 2 triangular submedian subacute posteriorly-directed lobes; ventral margin broadly rounded and forming posterior margin of pleotelson.

Antennule with 3-articled peduncle, basal article broadest and longest; article 2 triquestrous, distally hollowed for articulation of article 3; flagellum of single article about

half length of peduncle article 3, bearing 3 distal aesthetascs. Antenna with peduncle of 5 articles, article 2 produced ventrally into broad lobe; flagellum of single clavate article bearing numerous ventrodistal setae. Mandible lacking palp; incisor of 4 cusps; lacinia of 3–4 cusps; 8 spines in spine-row; molar stout, distally with flattened circular surface. Maxilla 1, inner ramus with 3 distal fringed setae; outer ramus with about 10 distal spines, some of which serrate. Maxilla

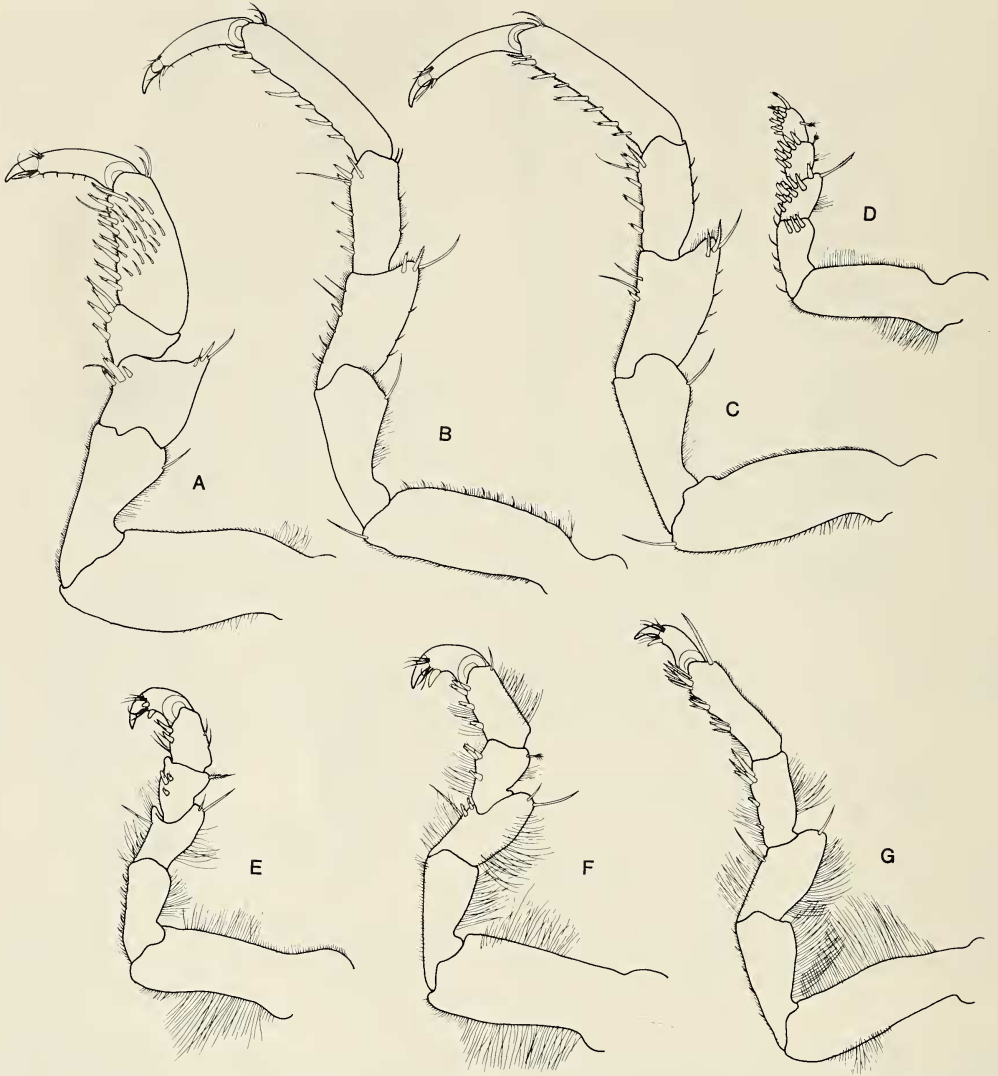


Fig. 4. *Miratidotea bruscai*, ovigerous female: A, Pereopod 1; B, Pereopod 2; C, Pereopod 3; D, Pereopod 4; E, Pereopod 5; F, Pereopod 6; G, Pereopod 7.

2, both lobes of outer ramus bearing numerous fringed spines; inner ramus with simple and sparsely fringed spines along mesial margin. Maxillipedal endite bearing 3 coupling hooks, several distal fringed spines; palp of 4 articles, article 2 longest and broadest, terminal article short. Pereopod 1, merus with 3 posterodistal spines; carpus triangular, with 4 posterodistal spines; propodus somewhat expanded, with 7 spines on posterior margin and numerous

smaller spines on mesial surface; unguis about half length of rest of dactylus. Pereopods 2 and 3 similar, longer than pereopod 1; merus with 2 anterodistal fringed spines; carpus roughly rectangular, with 5 sensory spines and one fringed spine on posterior margin; propodus elongate-rectangular, with 6 or 7 spines on posterior margin. Pereopod 4 short, equal in length to ischium and basis of pereopod 3; ischium with 3 distal spines; merus with 9 spines on posterodistal sur-

face; carpus with 8 spines on posterodistal surface; propodus with 7 spines on posterodistal surface; dactylus reduced to length of a spine but distally corneous. Pereopod 5, basis, ischium, and merus with elongate setules; carpus with 3 spines on posterior margin; propodus with 2 posterior spines; dactylus strongly hooked, approaching biunguiculate state. Pereopod 6 with elongate setules on basis, ischium, and merus; merus with 2 posterodistal spines; carpus with 4 posterodistal spines; propodus with 5 posterodistal spines; dactylus hooked, biunguiculate. Pereopod 7, elongate setules on basis, ischium, and merus; posterior margin of carpus with 2 separate, and clump of 4 spines on posterior margin; propodus with 3 clumps of spines on posterior margin; dactylus hooked, biunguiculate. Uropod with single ramus slightly less than half length of sympod, latter with elongate fringed seta at outer distal angle.

Color pattern.—Dorsal integument overall red-brown, with 6 darker longitudinal stripes running from pereonite 1 onto pleon. Cephalon with faint reticulation of color. Posteroventral area of pleotelson with 4 faint darker rays of brown.

Etymology.—The species is named for Dr. Richard C. Brusca, as a small recognition of his valuable contributions to isopod research.

Family Cirolanidae

Anopsilana jonesi, new species

Figs. 5, 6

Material.—Holotype, USNM 221722, ♂ TL 6.2 mm, paratypes, USNM 205679, 3 ♂ 5.6–6.7 mm, 5 non-ovig. ♀, 5.0–6.5 mm, 6 juvs. 2.2–4.5 mm, Sapodilla Lagoon, Sittee River, Belize, amongst red mangrove roots, coll. K. Fauchald, 9 Dec 1986.—Paratypes, USNM 205680, 2 ♂ 6.0–7.5 mm, 4 ovig. ♀ 5.4–6.0 mm, 17 juvs. 2.0–5.2 mm, Salt Creek, north of Dangriga, Belize, between red mangroves in 1 m, 31‰, 32°C, coll. M. Jones, 16 May 1977.—Paratypes,

USNM 205681, 4 ♂, 5.1–7.4 mm, 6 ♀, 5.0–7.0 mm, Anderson Lagoon, Sittee River, Belize, from amongst barnacles and mussels on red mangrove roots, coll. K. Fauchald, 11 Dec 1986.

Description.—Male: Body 2.6 times longer than wide, widest at pereonites 5 and 6. Cephalon somewhat sunken into pereonite 1, with small rostral point between antennular bases; eyes large, dorsolateral; three low dorsal tubercles near posterior margin; frontal lamina narrow-pentagonal, distal margin not projecting. Pereonite 1 with 4–6 low tubercles near posterior margin; pereonites 2–7 with several low submedian ridges. Coxae 2 and 3 narrow, posteriorly rounded; coxae 4–7 broader, posteroventrally somewhat produced to subacute apex. Pleonites 1–3 with free ventral margins rounded; pleonite 4 lacking free ventrolateral margins, with 2 low submedian tubercles on posterior margin. Pleotelson broadly triangular, posterior margin rounded, bearing 8–10 apical spines and numerous setae.

Antennular peduncle of 2 articles, basal article broader but slightly shorter than distal article; flagellum of 9–12 articles, distal 7–9 articles each bearing 1–3 aesthetascs. Antennal peduncle of 5 articles, 3 basal articles short, together equal in length to article 4, articles 4 and 5 subequal in length; flagellum of about 30 articles, reaching posteriorly to anterior of pereonite 5. Mandibular palp directed anteriorly, of 3 articles, article 2 longest, bearing about 12 fringed spines, article 3 with comb of about 16 spines on outer margin; incisor of 3 strong sclerotized cusps; lacinia having 5 cusps; 4 spines in spine-row; molar narrowly triangular, with row of short marginal spines. Maxilla 1, inner ramus with three stout setae; outer ramus with about 10 sclerotized spines, some of which spinulose, plus 1 central seta. Maxilla 2, 2 lobes of outer ramus short, outer bearing 4 spines, inner with 7–11 spines; inner ramus with 6 distal simple spines and 6–8 fringed proximal spines. Maxilliped, endite short, barely reaching beyond basal

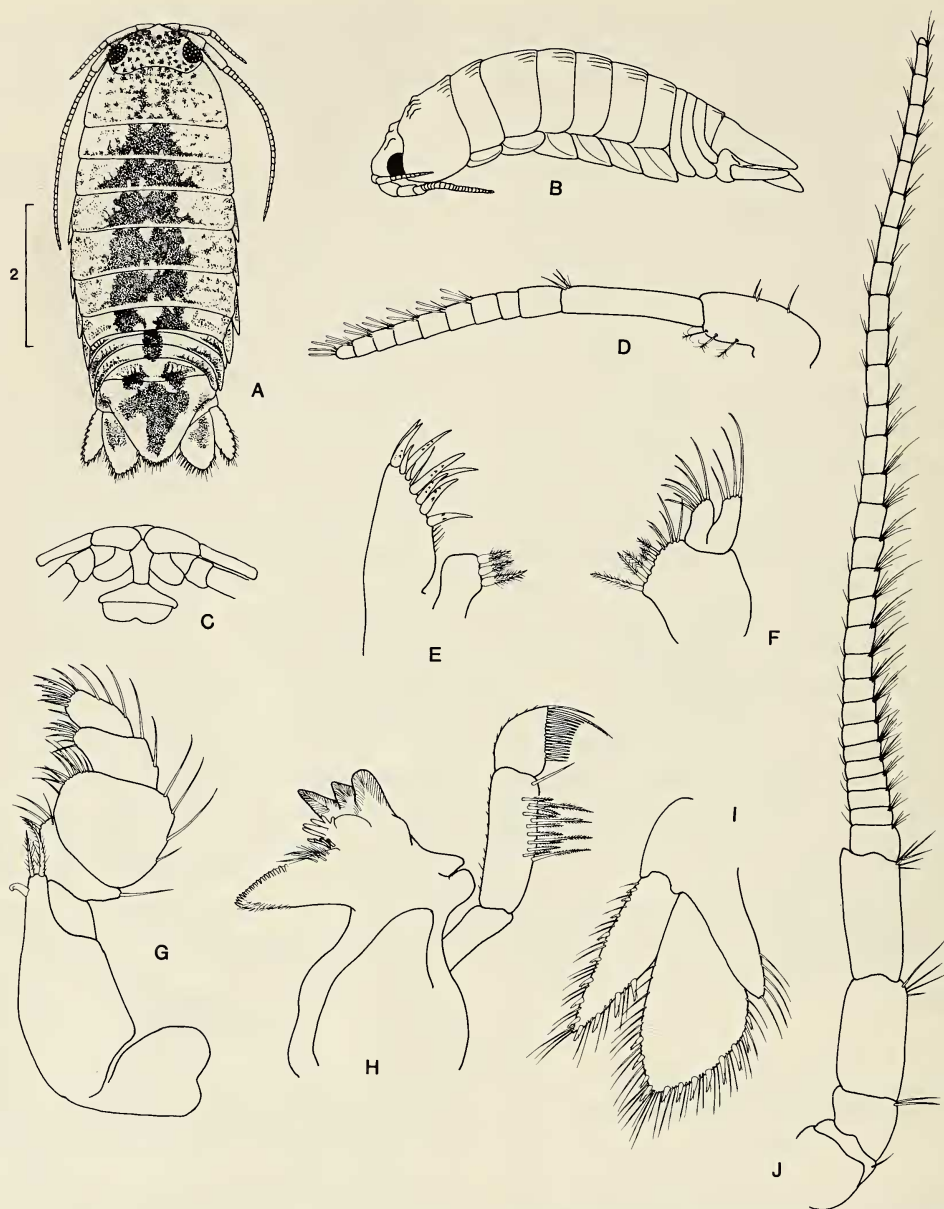


Fig. 5. *Anopsilana jonesi*, male: A, Entire animal in dorsal view; B, Entire animal in lateral view; C, Frontal lamina and clypeus; D, Antennule; E, Maxilla 1; F, Maxilla 2; G, Maxilliped; H, Mandible; I, Uropod; J, Antenna.

palp article, with 2-3 distal fringed setae and 1 or 2 coupling hooks; palp of 5 articles, article 3 longest and broadest; articles 3-5 each with group of mediolateral spines. Pereopods increasing in length posteriorly. Pereopod 1, merus with row of 6 blunt spines;

carpus short, with almost no free anterior margin, bearing single sensory spine posterodistally; propodus with spine at mid-length and single posterodistal spine. Pereopod 2 and 3 similar, ischium with 3 posterodistal spines and single large antero-

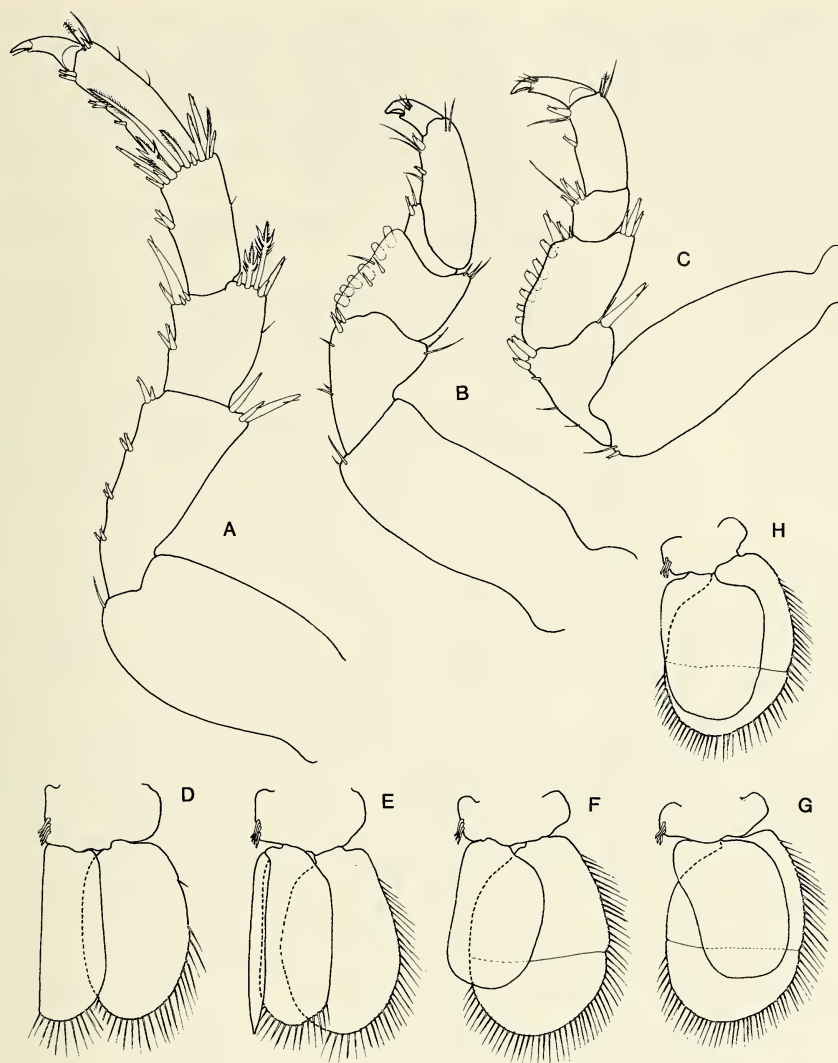


Fig. 6. *Anopsilana jonesi*, male: A, Pereopod 7; B, Pereopod 1; C, Pereopod 2; D, Pleopod 1; E, Pleopod 2; F, Pleopod 3; G, Pleopod 4; H, Pleopod 5.

distal spine; merus with row of 8 blunt spines on posterior margin and 3 anterodistal sensory spines; carpus about half length of propodus, with 3 posterodistal spines; propodus with single spine at midlength and another distally on posterior margin; unguis about half length of rest of dactylus. Pereopods 4–7 similar; ischium with 4 pairs of spines on posterior margin, 3 spines anterodistally; merus with 2 groups of spines on posterior margin, group of sensory and ser-

rate spines anterodistally; carpus rectangular, with pair of spines on posterior margin, plus dense cluster of sensory and serrate spines along distal margin; propodus elongate-rectangular, with few spines along posterior margin. Pleopod 1, endopod parallel-sided, narrower than ovate exopod. Pleopod 2, copulatory stylet apically acute, reaching slightly beyond, and articulating at base of, endopod; exopod ovate. Pleopods 3–5, endopods narrower and shorter than

exopods, lacking marginal setae; exopods broadly ovate, biarticulate, with marginal setae. Uropodal sympod produced along medial margin of endopod, bearing few distal setae; endopod widening distally, reaching beyond pelotelsonic apex, with about 12 marginal spines plus numerous setae; exopod narrow, lanceolate, apically acute, with 10–12 marginal spines.

Female: Essentially similar to male, but lacking tubercles and ridges on cephalon, pereonites, and pleonite 4. Setae on antennal flagellum shorter than in male.

Color pattern.—Similar in both sexes. Dorsal integument of cephalon and pereonite 1 with scattered brown chromatophores; pereonites 2–7 with solid central area, laterally with scattered chromatophores; pleonites 1–3 with middorsal patch of pigment; pleonite 4 and basal pleotelson with 2 patches, plus large irregular central blotch on pleotelson; uropodal endopod with irregular central patch.

Remarks.—The approximately nine known species of *Anopsilana* (see Bruce 1986) can be grouped into those occurring in freshwater caves (generally unpigmented and eyeless), and those pigmented forms such as *A. browni* (Van Name), *A. luciae* (Barnard), and *A. oaxaca* Carvacho and Haasmann, which occur in estuaries. The present species belongs to the latter group, and indeed, was caught along with single specimens of *A. browni* from Anderson Lagoon in the Sittee River and from Salt Creek. The two species may be separated by three easily seen features. 1. The color pattern, that of *A. browni* lacking the solid middorsal area on the pereon. 2. The frontal lamina, which in *A. browni* is distally broadly rounded and strongly projecting. 3. The strong double tubercles on the cephalon and rows of rounded tubercles on the pereonites and pleonites of male *A. browni*, contrasted with the three low tubercles on the cephalon and the low ridges on the pereonites of male *A. jonesi*.

Etymology.—The species is named for Dr.

Meredith Jones, of the Department of Invertebrate Zoology, Smithsonian Institution, who collected the first specimens of this species along with numerous other isopods from localities in the Caribbean.

Eurydice personata, new species
Figs. 7, 8

Material.—Holotype, USNM 211436, 1 ♂, 6.0 mm, paratypes, USNM 128314, 19 ♂, 5.0–6.0 mm, 4 ovig. ♀, 5.1–6.4 mm, 6 non-ovig. ♀, Mona Island, Puerto Rico, 40–50 ft, coll. R. Menzies and P. Glynn, 10 May 1966.—USNM 211435, 63 ♂, 3.5–4.5 mm, 1 ovig. ♀, 5.0 mm, 95 non-ovig. ♀, Bahamas north of Bimini Is., 1–2 m, coll. M. Jones, 22 Aug 1962.—USNM 111388, 2 ovig. ♀, 4.1 mm, Bahamas, surface plankton tow at night, coll. J. McCain, 14 Jul 1964.—USNM 60689, 3 ♂, 3.5–4.5 mm, 2 non-ovig. ♀, Bermuda, 27 Sep 1933.—USNM 65871, 1 non-ovig. ♀, Bigie Bay, Haiti, 23 Apr 1930.—USNM 221547, 38 ♂, 4.5–4.8 mm, 6 ovig. ♀, 4.9–5.8 mm, Grande Cay, Cuba, 19 Apr 1937.—USNM 86369, 7 juvs., off Miami, Florida, Jun 1942.—USNM 225445, 1 ovig. ♀, 5.6 mm, off Georgia, 27 m, 14 May 1981.—USNM 225440, 1 non-ovig. ♀, off Georgia, 18 m, 28 Jul 1981.—USNM 225448, 1 juv., off South Carolina, 34 m, 27 Jul 1981.—USNM 225450, 1 ♂, 1 non-ovig. ♀, 1 juv., off Georgia, 26 m, 12 Aug 1981.

Description.—Male: Body about 4 times longer than greatest width. Coxae of pereonites 2–7 ending in acute denticle. Pleonites 2–5 posteroventrally acute. Pleotelson wider than middorsal length, with anterior hollow; posterior margin between notches slightly convex, with 2 pairs of spines, inner pair longer than outer, between 5 and 6 times longer than wide. Cephalon lacking rostrum; frontal lamina narrow, lanceolate, distally acute; clypeus broadly triangular, distally acute and projecting anteroventrally; eyes large, lateral, reaching to ventral surface.



Fig. 7. *Eurydice personata*: A, Adult in lateral view; B, Antennule; C, Antennal peduncle; D, Antennal flagellar article enlarged; E, Pleotelson; F, Mandible; G, Maxilla 1; H, Maxilla 2; I, Maxilliped; J, Pereopod 1; K, Pereopod 7; L, Male pleopod 1; M, Male pleopod 2.

Antennular peduncle with article 2 at right angle to article 1; flagellum of 6 articles, article 2 longest, bearing series of aesthetascs. Antennal peduncle of 4 articles, article 3 with 4–6 slender spines distally; flagellum reaching posteriorly to level of pereonite 7, articles with plicate organ about half length of article. Mandibular palp of 3 articles, article 2 longest, article 3 with comb of 10 distal setae. Maxilla 1, outer ramus with 12 distal spines, some being spinulose. Maxilla 2, inner ramus short, truncate, with 4 proximal fringed setae and 5 distal simple setae; inner and outer lobes of outer ramus with 3 and 5 fringed setae respectively. Maxillipedal endite reaching to middle of palp article 2, with distal fringed setae reaching to palp article 4; palp with article 3 widest and longest. Pereopod 1–3 similar, prehensile; ischium with anterodistal extension bearing single spine, 2 acute and 2 blunt spines posterodistally; merus with single short anterodistal spine, 1 acute and 5 blunt spines on posterior margin; carpus lacking free anterior margin, with 2 posterodistal spines; propodus with 3 spines on posterior margin plus stout posterodistal specialized spine. Pereopods 4–7 similar, becoming more elongate posteriorly, ischium, merus, carpus, and propodus each bearing clumps of sensory spines on anterior and posterior margins. Pleopod 2, endopod with copulatory stylet clavate, distally blunt, reaching by one-fifth of its length beyond ramus. Uropodal exopod ovate, five-sixths length of endopod; latter with broadly truncate distal margin.

Female: Essentially similar to male, but body proportionally slightly broader.

Color pattern.—Entire dorsum except posterior three-fourths with dense brown pigmentation; sternites, pereopods (except propodi and dactyli), and pleopodal sympods pigmented (based on Georgia and South Carolina material).

Etymology.—The specific name is derived from the Latin *personatus*, meaning wearing a mask, and refers to the fact that

this species has been masquerading as either of two other species of *Eurydice*.

Remarks.—Examination of the material of three western Atlantic species of *Eurydice* in the Smithsonian's collections, and perusal of the literature, led to some confusion in my attempts to separate these species. Closer observation revealed that an undescribed species had previously been misidentified either as *E. convexa* or *E. littoralis*. *Eurydice personata*, the new species, while superficially very similar to *E. convexa* Richardson, 1900 (= *E. littoralis* Moore, 1901), can most easily be distinguished by its slender lanceolate frontal lamina. The following table provides further means for separating the three species occurring in the Florida Keys and Caribbean.

	<i>E. convexa</i> Richardson, 1900	<i>E. piperata</i> Menzies & Frankenberg, 1966	<i>E. personata</i> , new species
Frontal lamina	truncate, faintly bilobed	truncate, faintly bilobed	lanceolate acute
Pleotelson apex	convex	truncate to faintly convex	faintly convex
spines	4, moderate length	4, very short	4, elongate
♂ antennal plicate organ	1/5 length of article	1/6 length of article	1/2 length of article

Xylolana, new genus

Diagnosis.—Frontal lamina and rostrum fused, broad, separating antennular bases. Clypeus conical, projecting. Antennular peduncle of 3 articles; antennal peduncle of 5 (?4) articles, articles 3–5 subequal in length. Mandibular palp directed anteriorly. Max-

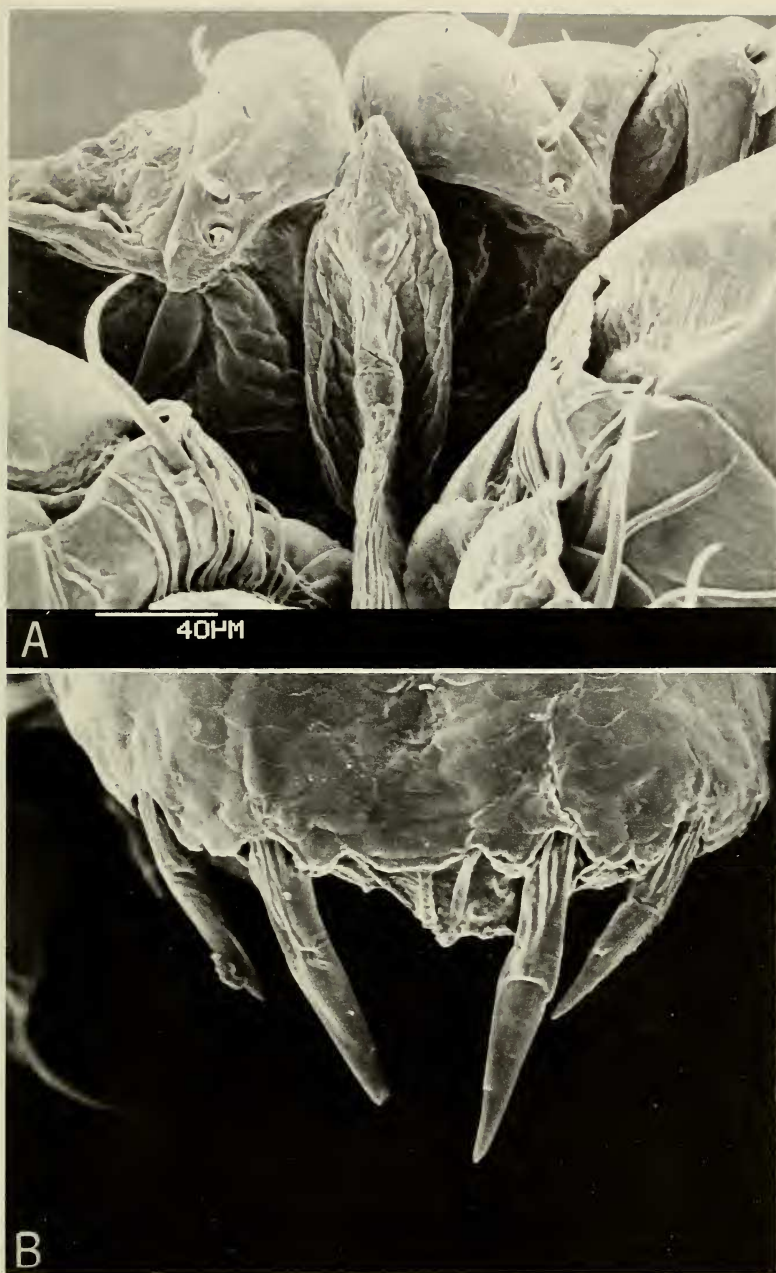


Fig. 8. *Eurydice personata*: A, Frontal lamina; B, Apex of pleotelson.

illipedal endite reduced, lacking coupling hooks. Pereonite 1 twice length of pereonite 2. Pereopods 1–3 with meri not anterodistally produced. Pereopods 4–7, articles not flattened, lacking natatory setae. Short penes

present on sternite of pereonite 7. Pleopod 2 in male with copulatory stylet articulating in distal half of mesial margin of endopod. Pleopods 3–5, exopod biarticulate; endopod lacking marginal setae. Pleonite 5 lacking

free lateral margin, overlapped laterally by pleonite 4. Uropodal sympod produced along mesial margin of endopod.

Type species.—*Xylolana radiculicola*, new species.

Etymology.—The generic name is derived from the Greek word *xylon* for wood, referring to the woody habitat of the animal, plus the commonly-used suffix 'lana,' derived from *Cirolana*, originally an anagram of Carolina.

Remarks.—Discovery of an apparently specialized and highly adapted species such as the one under discussion, immediately exposes a gap in our knowledge of the taxonomy of the cirolanids. (With few exceptions, this gap is present in most of the major isopod groups.) With no phylogenetic analysis at the generic level, there is no way of knowing which characters are apomorphic and which plesiomorphic. Separation of genera, while probably reflecting the phylogenetic relationships fairly well, is thus a shaky and somewhat subjective process. Well defined and long-understood genera such as *Eurydice* will present little problem, but with unusual and adapted forms such as the present species, generic placement becomes very difficult. Has a projecting clypeus evolved more than once? Is the condition with pleonite 4 overlapping pleonite 5 apomorphic? These and other similar questions arise in trying to place the present material.

The projecting clypeus would indicate affinity with the Eurydicinae, while the lateral overlapping of pleonite 5 by pleonite 4 would indicate the Cirolaninae. Features such as the fusion of the rostrum and frontal lamina, the medially-articulating copulatory stylet, and the lack of marginal setae on the endopods of pleonites 3–5, however, all indicate a stronger affinity with the Eurydicinae. Within the latter subfamily, the present species does not agree with the definitions of any of the genera. Using the available keys to the Cirolanidae also proves unsatisfactory. For example, using Bruce's

1986 key, the present species runs down to *Eurylana*, from which it differs in several features. There seems to be no choice but to describe a new genus for this material, in which small size and choice of habitat might well have dictated several of the specialized features.

Xylolana radiculicola, new species

Material.—Holotype, USNM 211437, ♂ 2.6 mm, paratypes, USNM 211438, 1 ovig. ♀ (cephalon plus anterior 4 pereonites only), 1 non-ovig. ♀ (cephalon missing), 1 non-ovig. ♀, 1.9 mm (SEM specimen), from dead in-situ red mangrove prop roots, 1 m, Twin Cays, Belize, coll. K. Rützler, Feb 1987.—Paratype, USNM 211439, non-ovig. ♀, 3.3 mm, from dead in-situ red mangrove prop roots, 1 m, Twin Cays, Belize, coll. B. Kensley, 12 Dec 1986.

Description.—Male: Body about 4 times longer than greatest width (at pereonites 4 and 5). Cephalon sunken into pereonite 1, with large well pigmented eyes; area between posterior margin and line joining posterior margins of eyes somewhat inflated; antennular bases separated by broad, flattened, fused rostrum and frontal lamina. Clypeus narrowly conical, projecting distally. Pereonite 1 about twice length of pereonite 2. Coxae of pereonites 2 and 3 posteriorly rounded; of pereonites 4–7 becoming progressively more produced and elongate posterodistally. Pleonites 1–3 short; pleonite 4 laterally broad, overlapping pleonite 5 and base of pleotelson, with oblique row of plumose setae; pleonite 5 short, lacking free lateral margin. Pleotelson basally broad with faint rounded middorsal ridge, becoming abruptly narrowed from base of uropodal sympod, tapering slightly to broadly rounded posterior margin.

Antennular peduncle of 3 articles, article 3 longest; flagellum of 6 articles, articles 3–5 each bearing 2 aesthetascs, terminal article with single aesthetasc. Antennal peduncle of 4 articles, article 4 only slightly longer

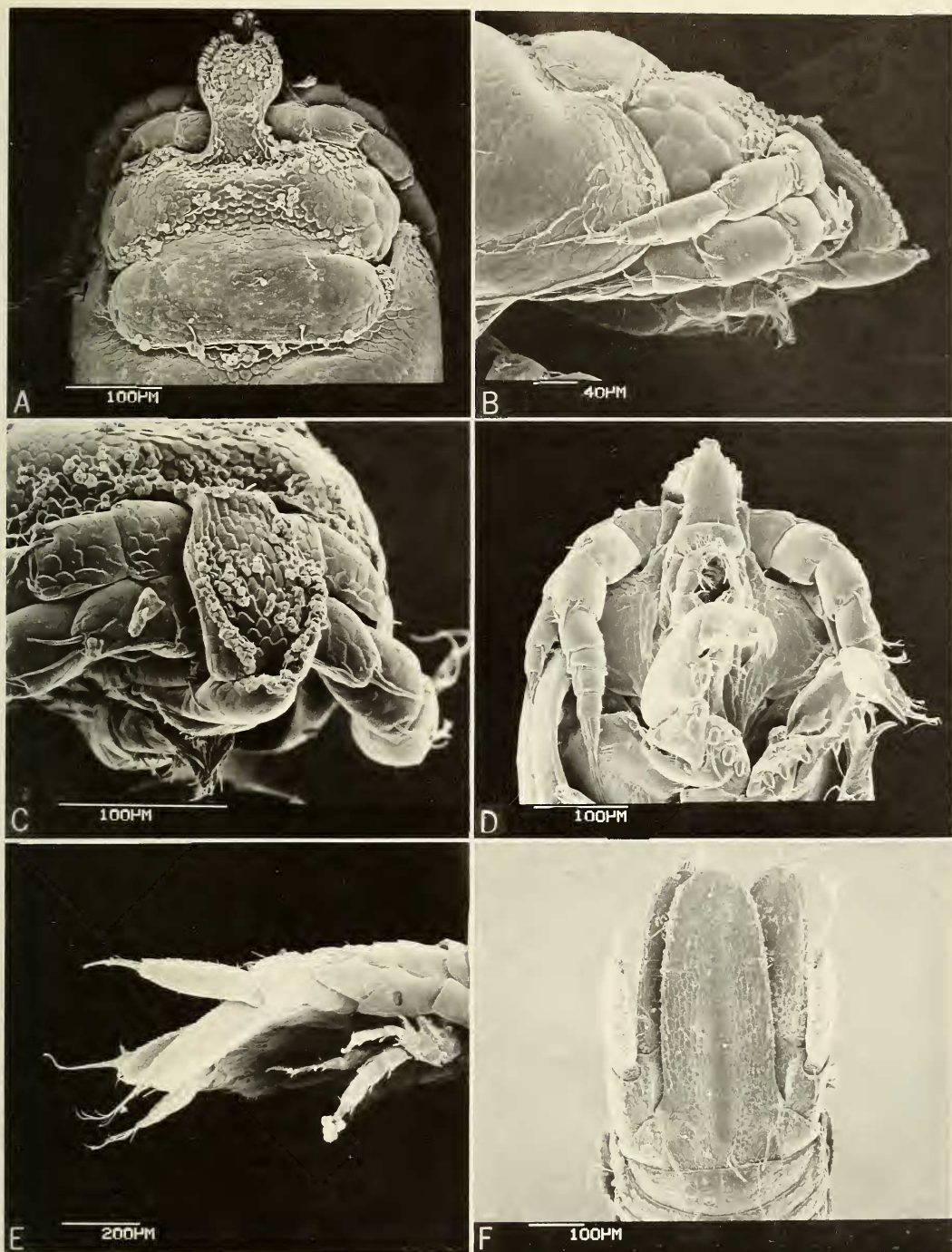


Fig. 9. *Xylolana radicolana*, paratype: A, Cephalon in dorsal view; B, Cephalon in lateral view; C, Cephalon in oblique-anterior view; D, Cephalon in ventral view; E, Pleon in lateral view; F, Pleotelson and uropods in dorsal view.

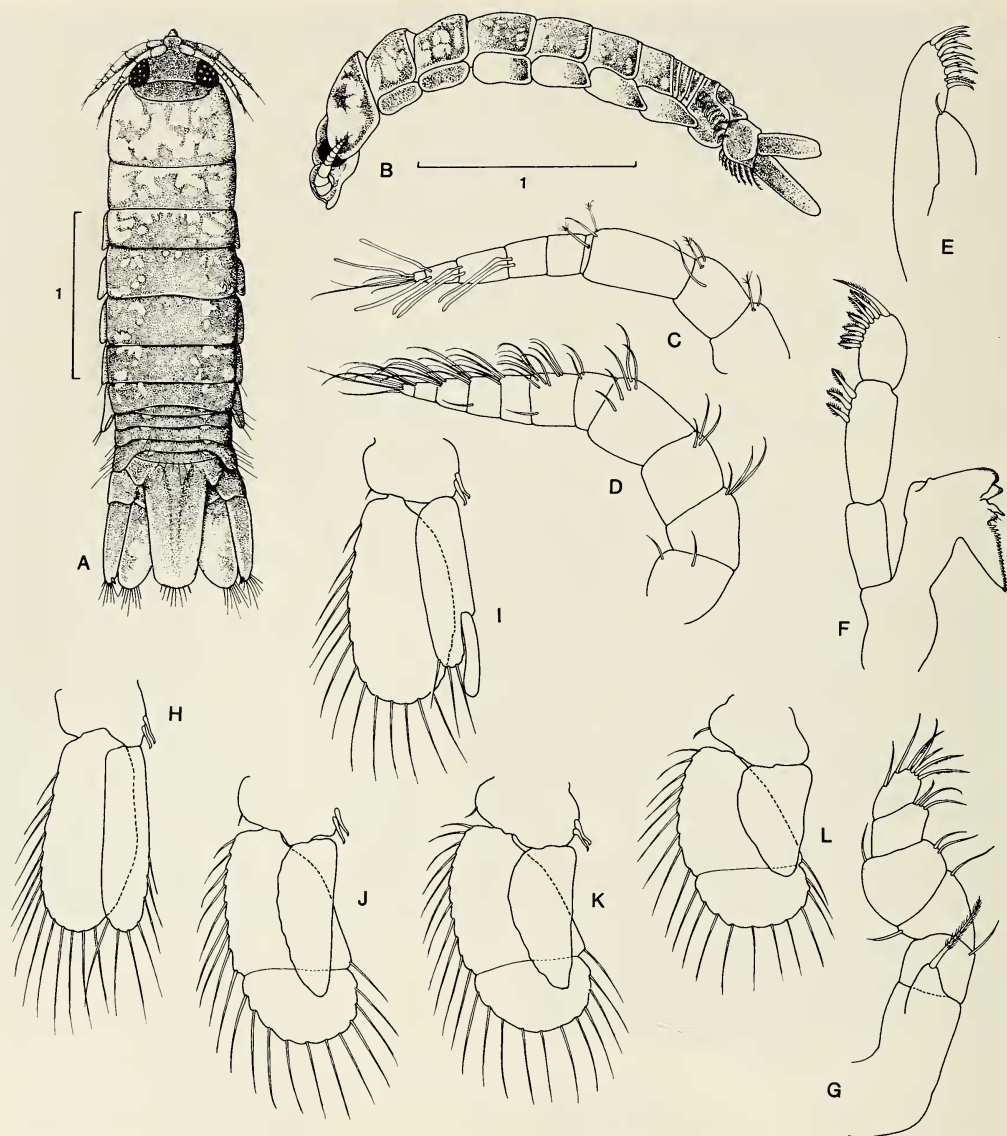


Fig. 10. *Xylolana radicola*, male paratype: A, Adult in dorsal view; B, Adult in lateral view, pereopods and pleopods not shown; C, Antennule; D, Antenna; E, Maxilla 1; F, Mandible; G, Maxilliped; H, Pleopod 1; I, Pleopod 2; J, Pleopod 3; K, Pleopod 4; L, Pleopod 5.

than 2 preceding articles; flagellum of 7 setose articles. Mandibular palp of 3 articles, article 2 longest, with 3 fringed spines distally, article 3 with 7 fringed spines becoming more elongate distally; body of mandible somewhat elongate, incisor of 2 rounded cusps; lacinia and spine row reduced; molar triangular, with row of mar-

ginal spines. Maxilla 1, outer ramus with 9 distal spines; inner ramus with single distal seta. Maxillipedal endite short, reaching to middle of palp article 1, with single distal seta; palp of 5 articles, article 3 longest and widest. Pereopods 1-3 similar, becoming progressively shorter posteriorly. Pereopod 1, merus with 1 acute and 4 rounded spines

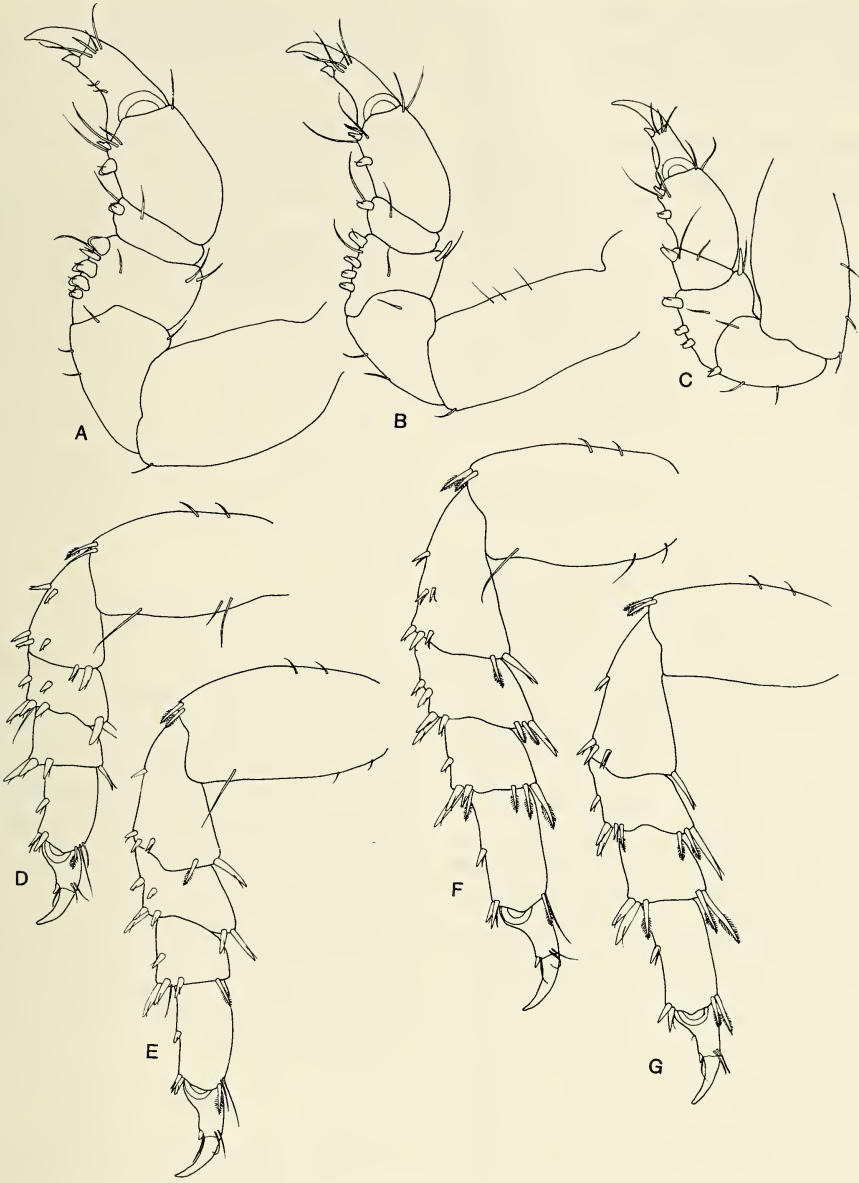


Fig. 11. *Xylolana radicolica*, male paratype: A, Pereopod 1; B, Pereopod 2; C, Pereopod 3; D, Pereopod 4; E, Pereopod 5; F, Pereopod 6; G, Pereopod 7.

on posterior margin; carpus with very short free anterior and posterior margins, with single spine on posterior margin; propodus slightly inflated, with 2 spines on posterior margin; dactylus with strong secondary unguis. Pereopods 2 and 3, merus with anterodistal spine. Pereopods 4-7 similar, becom-

ing more elongate posteriorly; basis with 2 posterodistal spines; ischium, merus, carpus, and propodus with groups of anterodistal and posterodistal spines plus few scattered spines on posterior surfaces; unguis about equal in length to rest of dactylus, with small secondary unguis. Penes on ster-

nite of pereonite 7 short, about twice longer than wide, separate. Pleopod 1, endopod half width and subequal in length to exopod. Pleopod 2, endopod half width but about one-fourth shorter than exopod, with clavate copulatory stylet articulating in distal half of mesial margin. Pleopods 3–5 similar, exopod broad, biarticulate, with marginal plumose setae; endopod triangular, shorter than exopod, lacking marginal setae. Uropodal sympod produced along mesial margin of endopod; latter ovate, distally broadly rounded, wider and slightly longer than distally subtruncate exopod, latter with single short mesiodistal spines.

Female: Very similar to male. Antennular flagellum of 4 articles.

Color pattern.—Dorsum with strong purple-brown pigmentation. Cephalon almost solidly pigmented; pereonite 1 with scattered patches; pigment becoming denser posteriorly; pleonites, pleotelson, and uropods fairly densely pigmented; coxae of pereonites 4–7 with only posterior half pigmented.

Habitat.—The five specimens of this species were collected on two occasions, from the same locality. The specimens came from the washings of dead but in situ red mangrove prop roots. These roots, while still submerged, have lost most of the epiphytes and epizooites found on live roots. The dead roots were broken up in a bucket of seawater, well rinsed, and the washings screened. In addition to the new cirolanid genus, the washings contained numerous polychaete worms, pycnogonidans, harpacticoid copepods, amphipods, tanaidaceans, *Nebalia* sp., plus gnathiid, sphaeromatid, limnoriid, anthurid, and corallanid isopods. All these organisms were living either on or under the decaying and flaking outer layers of the roots, or in the hollowed and tunneled inner tissues.

Etymology.—The specific name, meaning 'dwelling in roots,' refers to the habitat of the species.

Family Sphaeromatidae

Paraleptosphaeroma glynii Buss and Iverson

Paraleptosphaeroma glynii Buss and Iverson, 1981:2, figs. 1–11.

Material.—USNM 205682, 6 specimens (incl. 2 ovig. ♀), Smithsonian-Bredin Expedition sta 75-59, Portsmouth, Dominica, amongst boulders, rocks, and dead coral in 0.5 m, 19 Apr 1959.

Previous records.—Punta Paitilla, Pacific Panama, intertidal.

Remarks.—This is the first Atlantic record of this monotypic genus and is therefore one of the few species of isopods known to occur on both sides of the Isthmus of Panama.

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Literature Cited

- Bruce, N. L. 1986. Cirolanidae (Crustacea: Isopoda) of Australia.—Records of the Australian Museum, supplement 6:1–239.
- Brusca, R. C. 1984. Phylogeny, evolution and biogeography of the marine isopod subfamily Idoteinae (Crustacea: Isopoda: Idoteidae).—Transactions of the San Diego Society of Natural History 20(7):99–134.
- Buss, L. W., and E. W. Iverson. 1981. A new genus and species of Sphaeromatidae (Crustacea: Isopoda) with experiments and observations on its reproductive biology, interspecific interactions and color polymorphisms.—Postilla 184:1–23.

- Kensley, B., and M. Schotte. 1987. New records of isopod Crustacea from the Caribbean, the Florida Keys, and the Bahamas.—*Proceedings of the Biological Society of Washington* 100(1):216–247.
- Menzies, R. J., and D. Frankenberg. 1966. Handbook on the common marine isopod Crustacea of Georgia. University of Georgia Press, Athens, Georgia, 93 pp.
- Moore, H. F. 1901. Report on Porto Rican Isopoda.—*U.S. Fish Commission Bulletin for 1900* 2:161–176.
- Richardson, H. 1900. Synopses of North-American invertebrates. VIII. The Isopoda. Part 1. Cheilifera, Flabellifera, Valvifera.—*The American Naturalist* 34:207–309.

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